

REMARKS

The present Amendment and Response is intended to be fully responsive to all points of objections and/or rejections raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application are respectfully requested.

Applicant asserts that the present invention is new, non-obvious and useful. Prompt reconsideration and allowance of the claims are respectfully requested.

Status of the Claims

Claims 1-10 are pending in the application. Claims 1-10 have been amended.

Remarks to Specification

In the Office Action, the Examiner alleges that there is only one silicide layer in the invention and therefore the title of the invention is not descriptive.

Applicants respectfully disagree with the Examiner's allegation.

Applicants have amended the specification for better clarity. Applicants assert that the amendments are editorial in nature, fully supported by the specification of record (e.g., FIG. 1), and add no new matter.

The present invention describes a via contact structure as shown in FIG. 1 that has a first silicide layer 103 and a second silicide layer 106. Therefore, Applicants submit that the title of record "Dual silicide via contact structure and process" is descriptive to the present invention and no change is made to the title of this invention.

Remarks to Claim Objections

In the Office Action, the Examiner objected claim 1 for informality, alleging that both "first metal and second metal" refer to the same metal 106.

Applicants respectfully disagree with the Examiner's allegation.

Without conceding the appropriateness of the Examiner's objection, Applicants have voluntarily amended claim 1 to be more descriptive of the claimed invention. In

amended claim 1, "first metal" refers to metal element in layer 103 (p.8, line 14) and "second metal" refers to metal element in layer 106 (p.9, line 13). In other words, "first metal and second metal" refer to different metal elements, as opposed to same metal 106 as alleged by the Examiner.

In view of above, Applicants respectfully request that the Examiner's objection of claim 1 be withdrawn.

Remarks to Claim Objections

Claim Objections - 35 USC §112

In the Office Action, the Examiner objected claims 1-10 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention, and incomplete for omitting essential structural cooperative relationships of elements.

Applicants respectfully disagree with the Examiner's objection.

As to claim 1, line 5, FIG. 1 illustrates "a dielectric region (112) overlying said first layer (103)".

As to claim 1, lines 9-11, FIG. 1 illustrates "said second layer (106) including a second metal lining a sidewall of said opening (110) and a silicide of said second metal self-aligned to said top surface (101) in said opening (110)".

It appears that the Examiner may have inadvertently confused first layer (103) with layer 108.

As to claim 5, FIG. 1 illustrates there are first layer (103) and second layer (106) having first and second metals respectively. Therefore, claim 5 is definite.

In view of the above, Applicants request that the Examiner's objections of claims 1-10 under 35 U.S.C. §112, second paragraph, be withdrawn.

Remarks to Claim Rejections

Claim Rejections - 35 USC §102

In the Office Action, the Examiner rejected claims 1-10 under 35 U.S.C. §102(b), as being anticipated by Ohsaki et al. (JP Patent No. 08-107087).

Applicants respectfully disagree with the Examiner's rejection.

In the Office Action, it appears that the Examiner confused labeling (5?) for (?) since a labeling in the format of (5?) was never used throughout the Ohsaki reference. In light of this discrepancy, it is assumed that a label (5?) used by the Examiner actually corresponds to a label (?) in the Ohsaki reference. For example, "a diffusion region (52)" actually means "a diffusion region (2)" by the Examiner.

Independent claim 1, as amended, recites a via contact structure that includes a first layer (103, FIG.1) of essentially a silicide of a first metal, a dielectric region (112, FIG.1) overlying the first layer, a second layer (106 and 108, FIG.1) including a second metal, a diffusion barrier layer (122, FIG.1), and a third layer (124, FIG.1) including a third metal. Applicants respectfully submit that the above distinctive elements of claim 1 are not taught, suggested, or even implied by Ohsaki et al. For example, Ohsaki never teaches a dielectric region overlying a first layer of essentially a silicide of a first metal. To the best, Ohsaki describes a dielectric region (3) overlying a diffusion region (2), as indicated by the Examiner in FIG. 14 of Ohsaki, as opposed to a first layer of essentially a silicide of a first metal as specifically requested by amended claim 1.

In view of the above remarks, and based on requirements set forth by MPEP 2131 that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference, Applicants respectfully submit that amended claim 1 of present invention is not anticipated under 35 U.S.C. §102(b) by prior art reference of record, in particular by Ohsaki, and is patentable.

Claims 2-9 depend directly or indirectly from claim 1, and thus include all the distinctive elements of claim 1 in addition to other distinguishing features and elements. Therefore, claims 2-9 are patentable at least for the reasons as described above with regard to claim 1.

In view of above, Applicants respectfully request that the Examiner's rejections of claims 1-10 under 35 U.S.C. §102(b) be withdrawn.

Conclusion

In view of the preceding remarks, Applicants respectfully submit that all pending claims are now in condition for allowance. Favorable reconsideration and allowance of the claims are respectfully requested.

No fees are believed to be due in connection with this paper. However, if there is any such fee due, please charge any such fee to the deposit account No. 09-0458.

Respectfully submitted,



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